

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: HIGH AFT X-TUBE 412		
Job Number	: 27261				
Estimate Number	: 10559				
P.O. Number	:	Part Number	: D412664203		
This Issue	: 5/26/2006 S.O. No. :	Drawing Number	: D412-664-243 REV B		
Prsht Rev.	: NC	Project Number	: N/A		
First Issue	: / / Type : LANDING GEAR	Drawing Revision	: B		
Previous Run	: 27260	Material	: N/A		
Written By	: _____	Due Date	: 6/30/2006	Qty:	1 Um Each
Checked & Approved By	: _____				
Comment	: Est Rev:E 04.02.16 Reformat; Added D3189-1 K/DS Est Rev:F 06-03-29 Remove Coments on Pick List JLM				

Job Number:

Seq. #:	Machine Or Operation:	Description :
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1.0 DC DOCUMENT CONTROL

Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D412-664-203 CHG 003

2.0	D6009129	Crosstube Material
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part number	Description	Batch
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1 D6009-129 Crosstube 3.259412

Check OD = 3.500"; ID = 2.250"

3.0 MORI SEIKI MORI SEIKI CNC LATHE LARGE

Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA166

2-Turn first side as per Folio FA166

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243.

4.0 QC1 INSPECT ALL DIM TO DIM SHEET

Comment: INSPECT ALL DIM TO DIM SHEET

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

Date: Friday, 5/26/2006 1:49:53 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 27261

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA166

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243.

3-Polish entire outside surface of crosstube

4- Remove sand and plugs

5-Scribe part # and batch # using vibrating stylus as per Dwg D412-664-243

RC 06.06.03

1

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

RC 06.06.03

1

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

SG 06/06/05

1

8.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

RT 06-06-06

9.0

QC3/5

INSPECT WORK/WING WALK



Comment: Inspect work & Chemical conversion Coat

pm 06-06-12

①

1

10.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per Dwg D412-664-243 using CNC bender program 412-af and Folio FT010

DP 06-6-19

11.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

Bea 06-19 ID

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

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Date: Friday, 5/26/2006 1:49:53 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 27261

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill pilot holes in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551

Pr 06-06-230

2-Ream hole to finish size in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

Pr 06-06-230

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243

Pr 06-07-180

13.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

2x 06-07-18

14.0

OUTSIDE SERVICE

OUTSIDE SERVICES



Comment: Sub-Contracting OUTSIDE SERVICES

Liquid Penetrant Inspection as per QSI 038 Or

Issue P/O: *9717* LPI as per ASTM 1417

Level 2 Attach copy of NDT results to work order

u 06-07-19

15.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Inspect for transit damage

Ensure copy of NDT results attached to work order.

AB 06/07/20

16.0

QCS

DIMENSIONAL CHECK



Comment: Inspect for damage & ensure results are as per Dwg D412-664-203

06-07-21

17.0

SPRAY PAINTING

SPRAY PAINTING



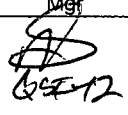
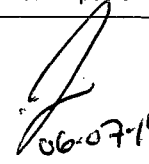
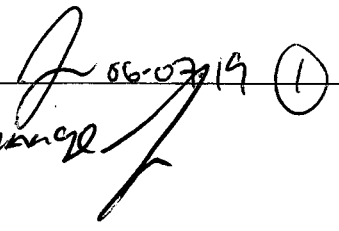
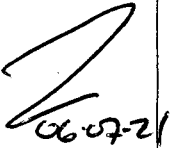
Comment: SPRAY PAINTING

1-Prime inside and outside crosstube as per QSI 005 4.2


06 08 25

2-Paint outside crosstube with White Imron as per QSI 005 4.2

06 08 25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector
06-07-19	13.1	QC 3/5 After machine: drilling. Add to Estimate perm. Change				 06-07-19	 06-07-19
06-07-21	16	QC 5 req'd for perm. change QC 5/3 by  06-07-19 ①					 06-07-21

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA:  Date: 06/09/06

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

Date: Friday, 5/26/2006 1:49:53 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 27261

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

QC14

Inspect Spray Paint



06-08-2001



Comment: Inspect Spray Paint

Wrap in plastic bag to protect from scratches

19.0

D2856600

Abrasion Strip



Comment: Qty.: 1.7640 f(s)/Unit Total : 1.7640 f(s)

Pick:

Qty Part number Description Batch

2 D2856-600(Cut to 10.090") Abrasion Strip *624328* *RT 06-09-01*

20.0

D2856600

Abrasion Strip



Comment: Qty.: 1.0080 f(s)/Unit Total : 1.0080 f(s)

Pick:

Qty Part number Description Batch

1 D2856-600(Cut to 10.870") Abrasion Strip *624328* *RT 06-09-01*

21.0

D28961

Support



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D2896-1 Support *26683* *RT 06-09-01*

22.0

D31891

Chafing Shield



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D3189-1 Chafing Shield *627190* *RT 06-09-01*

23.0

MS2192028

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part number Description Batch

4 MS21920-28 Clamp *M100479* *RT 06-09-01*

W/O:		WORK ORDER CHANGES					
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			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

Date: Friday, 5/26/2006 1:49:53 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 27261

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

MS2192030

clamp(per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number

Description Batch

2 MS21920-30

Clamp

M101568

25

06-09-01

25.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Assemble as per Dwg D412-664-203

FT

06-09-05

26.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

DP 6-9-5

27.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

28.0

AN640A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch:

M101124

✓

29.0

AN641A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch:

M101418

✓

30.0

AN960JD616

Washer



Comment: Qty.: 18.0000 Each(s)/Unit Total : 18.0000 Each(s)

Washer

Batch:

~~M100257~~

M100697 ✓

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

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			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ☒ _____ Date: 06/05/07

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

Date: Friday, 5/26/2006 1:49:53 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 27261

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

31.0

MS21042L6

Nut



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

Nut

Batch: M160151 ✓

DB 06/09/05 ①

32.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

PC 6/9/06 ①

33.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D412-664-203

Location: 0

PPP Rev: 0

PC 6/9/06 ①

34.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

PC 06/09/07 ①

Job Completion



LU 06-09-06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

DART AEROSPACE LTD	Work Order: 27261
Description: Crosstube Assembly (412 High Aft)	Part Number: D412-664-243
Inspection Dwg: D412-664-243 Rev: B	Page 1 of 1

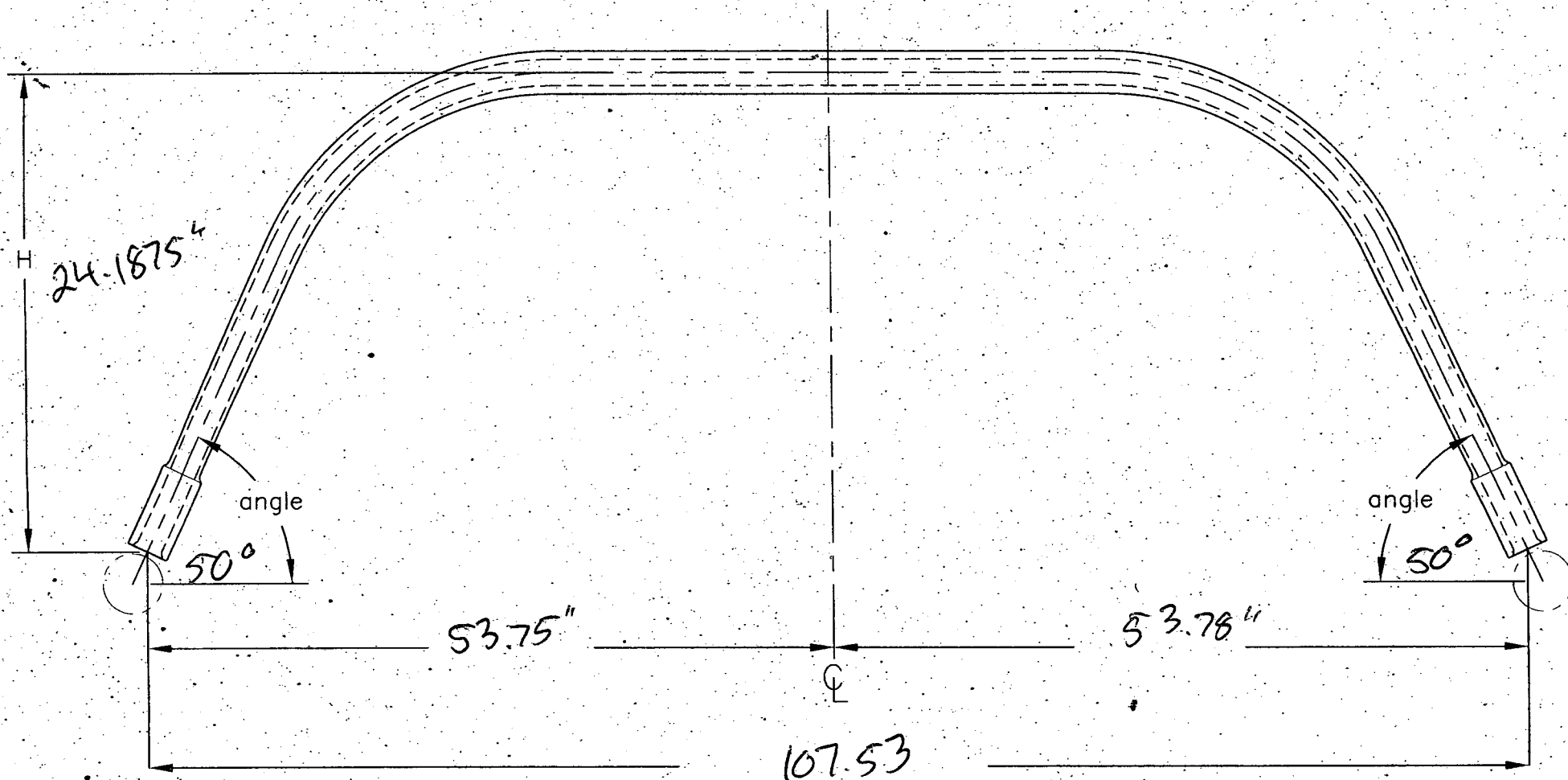
FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.684	+0.005/-0.000	2.687	✓			
	2.748	+0.005/-0.000	2.752	✓			
	2.884	+0.005/-0.000	2.887	✓			
	3.019	+0.005/-0.000	3.022	✓			
	3.163	+0.005/-0.000	3.167	✓			
	3.308	+0.005/-0.000	3.312	✓			
	3.429	+0.005/-0.000	3.433	✓			
	2.990	+0.005/-0.000	2.994	✓			
	2.618	+0.005/-0.000	2.622	✓			
	0.200	+/-0.010	.200	✓			
	R0.063	+/-0.010	.063	✓			
	R0.500	+/-0.010	.500	✓			
	4.971	+/-0.001	4.971	✓			
SIDE B	2.684	+0.005/-0.000	2.688	✓			
	2.748	+0.005/-0.000	2.752	✓			
	2.884	+0.005/-0.000	2.887	✓			
	3.019	+0.005/-0.000	3.022	✓			
	3.163	+0.005/-0.000	3.167	✓			
	3.308	+0.005/-0.000	3.311	✓			
	3.429	+0.005/-0.000	3.431	✓			
	2.990	+0.005/-0.000	2.992	✓			
	2.618	+0.005/-0.000	2.622	✓			
	0.200	+/-0.010	.200	✓			
	R0.063	+/-0.010	.063	✓			
	R0.500	+/-0.010	.500	✓			
	4.971	+/-0.001	4.970	✓			
	124.09	+/-0.020	124.09	✓			

Measured by: MB	Audited by: J.G	Prototype Approval: N/A
Date: 06/06/02	Date: 06/06/05	Date: N/A

Rev	Date	Change	Revised by	Approved
A	04.06.16	New Issue (P/O D412-664-203)	KJ/JLM	
B	06.03.09	Dwg Rev updated	KJ/JLM	



DATE: 06.01.19

DESCRIPTION: 412604203

BATCH NO: 27261

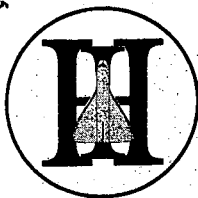
DRAWING: 412-664-243 Rev B

H: ~~24.1875~~ 24.37

1/2 SPAN: 53.72

TOTAL SPAN: 107.44

ANGLE: 50°



HeathAir

INTERNATIONAL (1991) INC.

681 Ave. Lepine, Dorval, Québec H9P 1G3
Tél.: (514) 636-1000 • Fax: (514) 636-0031

W.O. N° 34517

A.M.O. Number: 46/90

NON-DESTRUCTIVE TESTING REPORT

AIRCRAFT / COMPONENT INFORMATION

REGISTRATION: -

MODEL/TYPE: -

SERIAL NUMBER: -

TOTAL HR/LDG: -

OPERATED BY: -

BASED AT: -

INSPECTION REQUIREMENTS

Carry out FPI of (4) cross tubes (external surface) as per ASTM E-1417-05 and the Dart QSI 038, Section 4.1.1 (on file at client) - parts delivered to HeathAir.

Qty (2) P/N D212-664-201 Cross tubes S/N's B27630 and B26320

Qty (2) P/N D412-664-203 Cross tubes S/N's B27389 and B27261.

☐ RADIOGRAPHY

☐ ULTRASONIC

☒ PENETRANT

☐ MAGNETIC PARTICLE

☐ EDDY CURRENT

INSPECTION REPORT

Fluorescent penetrant inspection was performed in accordance with the above requirements on (4) Cross Tubes.

Note: A Level 3 penetrant was substituted for the requested Level 2 (3 is more sensitive)
Ardrox 970P25E Batch #04B503.

(4) cross tubes inspected. (4) PASSED inspection / (0) FAILED inspection.

THE MAINTENANCE DESCRIBED ABOVE HAS BEEN PERFORMED IN ACCORDANCE WITH
THE APPLICABLE STANDARDS OF AIRWORTHINESS

INSPECTED BY: 

DATE July 19, 2006

INSPECTION
STAMP(S) 

CUSTOMER INFORMATION

CUSTOMER: Dart Aerospace

P.O. NUMBER

1717

ADDRESS:

CONTACT NAME:

Linda

LABOUR @

MATERIALS @

TRAVEL EXPENSES @

HOTEL EXPENSES @

\$

GST

PST

INVOICE NO.

TOTAL \$

WHITE COPY - INSPECTION FILE • YELLOW COPY - CUSTOMER • PINK COPY - ACCOUNTANT